GDM-834x Series Dual Measurement Multimeter

New Product Announcement

GDM-834x Series
(50000 Counts)

GW INSTEK rolls out the new generation Dual Measurement Multimeter -- the GDM-834x series, which has two models -GDM-8341 and GDM 8342. Its exceptional features include 50,000 counts, VFD dual-display, 0.02% basic DC voltage accuracy and a USB protocol connector to provide users with measurement precision, lucid data observation, and the convenience to connect with the personal computer.

The GDM-834x series not only supports the fundamental measurement items provided by general multimeters, but also equips with capacitance and temperature measurement functions. Furthermore, the GDM-834x series also provides many auxiliary functions to meet the measurement requirements for manufacturing process tests, educational experiments and testing facilities.

With respect to storing and retrieving data, the GDM-834x series has two methods to offer: first, the USB flash drive storage function --- operating alone without connecting with a computer; second, USB interface (virtual COM port) and optional GPIB interface (must be installed in factory) for automatic measurement system users to conveniently save and retrieve data.

Convenient USB flash drive storage function

The major distinction between GDM-8342 and products in the same category is that GDM-8342 provides USB flash drive storage function, which allows users to conveniently save data into a USB flash drive through a simple and proper setting. This unique function, different from other digital multimeters which must first save data into its own internal memory then transfer out the file, or connect multimeters with a computer to retrieve data, not only saves operational time but also cuts down the cost and time of developing programs.

The USB flash drive storage function incorporates two modes -- basic and advanced, which can be selected from the front panel. When the basic mode is on, data will be saved into an automatically established new folder (time of established file will be determined by system default) and the starting time of data logging will use a fixed time marker (00hr: 00min: 00sec). For advanced mode, users can designate a file path to save data or establish a new folder and the starting time of data logging is determined by users' inputs (for instance: 23hr: 45min: 32sec). The number of data files can be saved in one second is determined by the speed of selected function.

The USB storage function allows each flash drive to establish 100 folders (GW000 ~ GW099). Each folder has a capacity of saving 5,000,000 data files (which are divided into 100 sub-file names, therefore, each sub-file name can save 50,000 data files. Take folder GW000 as an example, internal file names are

GW000_00 ~ GW00_99). The storage format is CSV, which can open files and conduct file analysis by existing tools. (such as Microsoft Excel)

Selectable measurement speeds

The GDM-834x series has three selectable measurement speeds- fast/medium/slow. For instance, the DC voltage measurement can reach 40 readings per second on the fast mode, which can maximize the effectiveness of each measurement.

(Readings/s)

Function vs. Speed	slow	medium	fast
DCV/DCI/R	5	10	40
ACV/ACI	5	10	40
Continuity/Diode	10	20	40
Frequency/Period	1	10	76
Capacitance	2	2	2

will not decrease displayed digits because of selecting different speeds

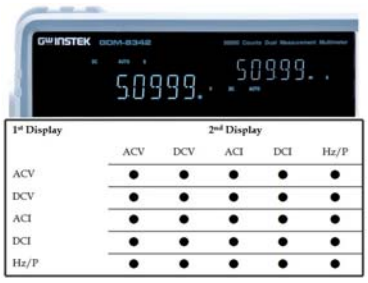
Various measurement items and functionalities

The GDM-834x series provides various measurement items and functionalities compared with that of the products of same category. There are twelve major measurement items of this series including AC voltage/current, DC voltage/current, AC+DC voltage/current, two-wired resistance, capacitance, Frequency/ period, diode and continuity beeper test. Temperature measurement is an optional function for GDM-8342. Many auxiliary functions, such as maximum/minimum values, reading hold, relative values, dB, dBm, algorithms (MX+B, 1/X, Ref%) and comparison, are designed to reinforce the major measurement items to satisfy users' daily working requirements.

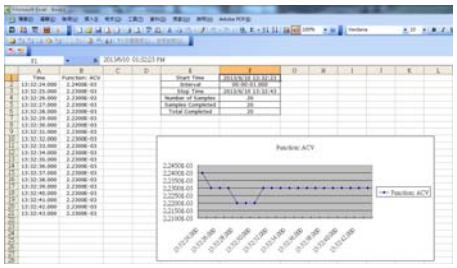
Auxiliary functions	Major measurement items						
	DCV / ACV	DCI / ACI	R	Hz/P	Temp*	Diode	Capa.
dB	●	X	X	X	X	X	X
dBm	●	X	X	X	X	X	X
Max/Min	●	●	●	●	●	X	●
Relative	●	●	●	●	●	X	●
Hold	●	●	●	●	●	X	X
Compare	●	●	●	●	●	X	●
Math	●	●	●	●	●	X	X

Dual measurement/dual display

The GDM-834x series, similar to GW INSTEK's 6 1/2 and 5 1/2 digits multimeters, equips with dual display to support the possible combinations of measurement items. For example, the DC voltage and current or DC voltage with AC element will appear when monitoring components of test wiring. The results of each measurement will simultaneously appear on different displays that not only save users' precious time but also exempt users from the trouble of selecting displays while reading measurement results.



Free software-remote control and data retrieving



The GDM-834x provides free USB protocol connection software-Excel ADDins for users' easy access. After installing the software, Microsoft Excel will establish Marco for users to directly control the setting of the GDM-834x series to record the results of the measurements. The recorded data will be synchronously transformed into graphic displays via Excel drawing function that not only eliminates the cost and time of developing programs but also overcomes the compatibility issue of different programming languages.

Command compatibility

For GDM-8246 users, the GDM-834x series also provides a complete command compatibility (SYSTEM\ LANG\COMP). Users can replace machines through the simple setting of the GDM-834x series without worrying the extra cost to modify the existing program and the delay of production time.

Key features

- 50,000 counts, VFD display
- Dual measurement/dual display
- Selectable measurement speeds, the maximum: 40 Readings/s for DCV
- The basic precision of DC voltage: 0.02%
- Auto/manual range selection
- True RMS (AC，AC+DC) measurements
- 11 different measurement functions
- Max./Min., REL/REL#, MX+B, 1/X, Ref%, Compare, Hold, dB, dBm
- Standard USB device interface to connect with a computer
- Temperature measurement function (GDM-8342 only)
- USB storage function (GDM-8342 only)
- Optional GPIB interface (GDM-8342 only and must be installed in factory)

Optional GPIB included

GDM-8342 appearance (front/back)

GDM-8341 appearance (front/back)

Note: Optional GPIB interface is only for GDM-8342 and it must be installed in factory

Specifications comparison with Competitor

Specifications highlighted in red represent better performance

"X" represents "no such function" or "function not available"

Brand	GW Instek	Agilent
Model	GDM-8342/8341	U3401A
Max. Counts	51,000	51,000
Display	Dual Display(VFD)	Dual Display(VFD)
	Dual Measurement	Dual Measurement
Sample Rate(S/M/F)	5/s, 10/s, 40/s	1/s (only)
DC Voltage		
Range	500mV~1000V	500mV~1000V
Best Accuracy	0.02%+4	0.02%+4
AC Voltage True RMS		
Range	500mV~750V	500mV~750V
Best Accuracy	0.35%+15(50Hz~10kHz)	0.35%+15(50Hz~10kHz)
Bandwidth	100kHz	100kHz
AC+DC Voltage True RMS		
Range	500mV~750V	500mV~750V
Best Accuracy	0.35%+25(50Hz~10kHz)	0.5%+25(50Hz~10kHz)
Bandwidth	100kHz	100kHz
DC Current		
Range	500μA~12A	500μA~10A
Best Accuracy	0.05%+4	0.05%+4
AC Current True RMS		
Range	500μA~12A	500μA~10A
Best Accuracy	0.5%+20(50Hz~2kHz)	0.5%+20(50Hz~2kHz)
Bandwidth	20kHz	20kHz
AC+DC Current True RMS		
Range	500μA~12A	500μA~10A
Best Accuracy	0.5%+30(50Hz~2kHz)	0.5%+30(50Hz~2kHz)
Bandwidth	20kHz	20kHz
Resistance (2Wire)		
Range	50Ω~50MΩ	50Ω~50MΩ
Best Accuracy	0.1%+3	0.1%+3
Capacitance		
Range	5nF~50μF	X
Best Accuracy	2%+4	X
Frequency		
Range	10Hz ~ 1MHz	5Hz~500kHz
Best Accuracy	0.01%+3	0.01%+3
Period	1μs~100ms	X
Diode Test	YES	YES
Continuity Beeper	YES	YES
Temp. Measurement[1]	Type K,J,T	X
Math	Rel, Max/Min, dBm, dB, Hold, MX+B, 1/X, Ref%, Compare	dBm,Rel,MinMax, COMP,Hold, %
RS-232C	X	Calibration use only
USB Storage[1]	Standard	X
USB Device	Standard	X
GPIB[2]	Option (factory install)	X
Software	YES	X

[1] : Temperature and USB storage function is only available for GDM-8342.
[2] : Optional GPIB interface is only for GDM-8342 and it must be installed in factory.

Target Markets and Associated Features

Manufacturing Engineering

- 50,000 counts resolution and 0.02% DC basic accuracy not only meet the requirements of accuracy and precision for the manufacturing verification, but also satisfy the quality requirement of manufacturing processes.
- Various measurement items and auxiliary functions satisfy the application measurement requirements for manufacturing various products.
- Selectable measurement speed/comparative functions effectively increase verification and testing efficiency for manufacturing processes.
- USB storage function (GDM-8342 only) provides an instant results storage to facilitate the real-time analysis and data storage for manufacturing process improvement without connecting with a computer.
- USB device/optional GPIB (GDM-8342 only) meet the requirements of automation control for manufacturing processes, and collect as well as manage verification and testing results to facilitate products analysis and improvement.

Education

- 50,000 counts resolution and 0.02% DC basic accuracy provide the requirements of accuracy and precision for educational experiments.
- Various measurement items and auxiliary functions meet the measurement requirements for educational experiments.
- USB device/optional GPIB (GDM-8342 only) meet the requirements of long monitoring of experimental data via a personal computer to collect and manage verification and testing results to facilitate experiment analysis.

Maintenance & Repair

- 50,000 counts resolution and 0.02% DC basic accuracy meet the requirements of accuracy and precision for maintenance and repair.
- Dual measurement/dual display functions provide different parameter measurements and display results simultaneously to facilitate maintenance efficiency.
- Various measurement items and auxiliary functions meet the measurement requirements for maintenance and repair.

Quality Assurance Verification

- 50,000 counts resolution and 0.02% DC basic accuracy satisfy the requirements of accuracy and precision for quality assurance verification.
- Various measurement items and auxiliary functions meet the measurement requirements for quality assurance verification.
- USB storage function (GDM-8342 only) provides an instant results storage to facilitate the real-time analysis and data storage for verification without connecting with a computer.
- USB device/optional GPIB (GDM-8342 only) meet the requirements of long monitoring of experimental data via a personal computer to collect and manage verification and testing results to facilitate analysis.

Key Dates for Product Announcement

1. Distributor Announcement & Demo Unit order and Shipping (29nd of July)
2. Global Market Announcement & Mass Quantity Order Fulfillment (1st of August)

Service Policy

1. **3 year warranty**
2. **Service Support**

   The service instructions in the Service Manual will help distributors repair defective units promptly. Should the board replacement is necessary to fix the defective unit, the board swapping service support is provided by Good Will Instrument to facilitate the repair jobs done at the distributor's site.
3. GW Instek continuingly provides the after-sales support through its website. The most up-to-date version of service manual and Marcom material of GDM-834x series will be posted on the distributor zone of GW Instek Website at http://www.gwinstek.com

Should you have any questions on the GDM-834x series announcement, please don't hesitate to contact us

Sincerely yours;

Overseas Sales Department
Good Will Instrument Co., Ltd
No. 7-1, Jhongsing Road, Tucheng Dist.,
New Taipei City 236, Taiwan
Email: marketing@goodwill.com.tw

Specifications

General

Note

- The specifications apply when the DMM is warmed up for at least 30 minutes and operates in slow rate.
- Below are the basic conditions required to operate the DMM within specifications:
  - Calibration: Yearly
  - Operating Temperature Specification: 18~28˚C (64.4~82.4˚F)
  - Relative Humidity: 80% (Non Condension)
  - Accuracy: ± (% of Reading + Digits)
  - AC measurements are based on a 50% duty cycle.
  - The power supply cable must be grounded to ensure accuracy.
  - All specifications are applicable to the main (1st) display only.

Specification Condition	Temperature: 18~28˚C (64.4~82.4˚F) Humidity: <80%RH, 75%RH for resistance measurement readings greater than 10MΩ.
Operation Condition	Temperature 0°C ~ 50°C, • 0°C ~ 35°C, Relative Humidity < 80%RH • >35°C, Relative Humidity < 70%RH
Storage Condition	Temperature −10°C ~ 70°C • 0°C ~ 35°C, Relative Humidity < 90%RH • >35°C, Relative Humidity < 80%RH
Power Source	AC 100/120/220/240V ±10%, 50–60Hz ; Consumption Max. 15VA
Dimension & Weight	265(W) x 107(H) x 302(D) mm, Approx. 2.9kg without option

DC Voltage

Note

- When the input value exceeds the full scale of the selected range, the display will show -OL- (over load) on the display.
- The specifications are guaranteed to an input voltage of 1000V. A beeping alarm will go off when the input voltage is higher than 1000V.
- Input protection of 1000V peak on all ranges.
- DC Common Mode Rejection Rate : >90 dB at dc, 50 or 60Hz ± 0.1% (1kΩ unbalanced, slow rates)

Range	Resolution	Full Scale	Accuracy (1 year 23˚C ±5˚C)	Input Resistance
500mV	10µV	510.00		10MΩ or >10GΩ
5V	100µV	5.1000		10MΩ or >10GΩ
50V	1mV	51.000	0.02%+4	11.1MΩ
500V	10mV	510.00		10.1MΩ
1000V	100mV	1020.0		10MΩ

AC Voltage, ACV+DCV[3] (AC Coupled)

Note

- The specifications are guaranteed to an input of 750V. A beeping alarm will go off when the input value is higher than 750V.
- Input protection of 1000V peak on all ranges.
- AC-coupled true RMS – measures the AC component of the input with up to 400Vdc of bias on any range
- AC Common Mode Rejection Rate : >60 dB, 50 or 60Hz ± 0.1% (1kΩ unbalanced, slow rates)

			Accuracy (1 year 23˚C ±5˚C) [1]			
Range	Resolution	Full Scale	30-50Hz	50-10kHz	10k-30kHz	30k-100kHz
500mV	10µV	510.00	1.00%+40	0.50%+40	2.00%+60	3.00%+120
5V	100µV	5.1000	1.00%+20	0.35%+15	1.00%+20	3.00%+50
50V	1mV	51.000	1.00%+20	0.35%+15	1.00%+20	3.00%+50
500V	10mV	510.00	x	0.5%+15	1.00%+20[2]	3.00%+50[2]
750V	100mV	765.0	x	0.5%+15	x	x

[1] Specifications are for sine wave inputs that are greater than 5% range.
[2] Input voltage <300Vrms.
[3] The accuracy of ACV+DCV is equal to ACV's with 10 more digits added.

DC Current

Note

- 500μA~500mA range has a 3.6V voltage limit protection and 0.5A fuse protection. And 10A range has a 12A fuse protection.
- When the input value exceeds the full scale of the selected range, the display will show -OL- (over load) on the display.
- The specifications are guaranteed to an input of 10A. A beeping alarm will go off when the input value is higher than 10A.

Range	Resolution	Full Scale	Accuracy (1 year 23˚C ±5˚C)	Shunt Resistance	Burden Voltage
500μA	10nA	510.00	0.05%+5	100Ω	0.06V max
5mA	100nA	5.1000	0.05%+4	100Ω	0.6V max
50mA	1μA	51.000	0.05%+4	1Ω	0.14V max
500mA	10μA	510.00	0.10%+4	1Ω	1.4V max
5 A	100μA	5.1000	0.25%+5	10mΩ	0.5V max
10 A	1mA	12.000	0.25%+5	10mΩ	0.8V max

AC Current, ACI+DCI[3] (AC Coupled)

Note

- The specifications are guaranteed to 10A. A beeping alarm will go off when the input current being measured is higher than 10A.

Range	Resolution	Full Scale	Accuracy (1 year 23˚C ±5˚C) [1]				Burden Voltage
			30-50Hz	50-2kHz	2k-5kHz	5k-20kHz	
500μA	10nA	510.00	1.50%+50	0.50%+40	1.50%+50	3.00%+75	0.06V max
5mA	100nA	5.1000	1.50%+40	0.50%+20	1.50%+40	3.00%+60	0.6V max
50mA	1μA	51.000	1.50%+40	0.50%+20	1.50%+40	3.00%+60	0.14V max
500mA	10μA	510.00	1.50%+40	0.50%+20	1.50%+40	3.00%+60[2]	1.4V max
5A	100μA	5.1000	2.0%+40	0.50%+30	x	x	0.5V max
10A	1mA	12.000	2.0%+40	0.50%+30	x	x	0.8V max

[1] The 500μA range requires an input of >35μA to meet specifications. The 5mA~10A ranges need more than 5% of full scale range to meet specifications.
[2] Input current (5k ~ 20kHz)<330mArms.
[3] The accuracy of ACI+DCI is equal to ACI's with 10 more digits added.

Resistance

Note

- Open circuit voltage approximates 6V max on 500~5MΩ range, approximates 5.5V max on 50MΩ range.
- Input protection of 500V peak on all ranges.

Resistance	Resolution	Full Scale	Test Current	Accuracy (1 year 23˚C ±5˚C)[2]
500Ω	10mΩ	510.00	0.83mA	0.1%+5 [1]
5kΩ	100mΩ	5.1000	0.83mA	0.1%+3 [1]
50kΩ	1Ω	51.000	83μA	0.1%+3
500kΩ	10Ω	510.00	8.3μA	0.1%+3
5MΩ	100Ω	5.1000	830nA	0.1%+3
50MΩ	1kΩ	51.000	560nA//10MΩ	0.3%+3

[1] Using the REL function. If you don't use the REL function then increase the error by 0.2Ω.
[2] When measuring resistances greater than 500kΩ, please use shielded test leads to eliminate the noise interference that may be induced by standard test leads.

Diode

Note

- Input protection of 500V peak.
- Open circuit voltage approximates 6V.

Range	Resolution	Full Scale	Test Current	Accuracy (1 year 23˚C ±5˚C)
5V	100μV	5.1000	0.83mA	0.05%+5

Continuity

Note
- Input protection of 500V peak.
- Open circuit voltage approximates 6V.

Range	Resolution	Full Scale	Test Current	Accuracy (1 year 23˚C ±5˚C)
5000.0Ω	100mΩ	5100.0	0.83mA	0.1%+5

Capacitance

Note
- Input protection of 500V peak.

Range	Resolution	Full Scale	Test Current	Accuracy (1 year 23˚C ±5˚C) [1]
5nF: 0.5~1nF [2]	0.001nF	5.100	8.3μA	2.0%+20
5nF: 1~5nF [2]	0.001nF	5.100	8.3μA	2.0%+10
50nF: 5~10nF [2]	0.01nF	51.00	8.3μA	2.0%+30
50nF: 10~50nF [2]	0.01nF	51.00	8.3μA	2.0%+10
500nF	0.1nF	510.0	83μA	2.0%+4
5μF	1nF	5.100	0.56mA	2.0%+4
50μF	10nF	51.00	0.83mA	2.0%+4

[1] For the 5nF ~ 50μF range, make sure that the input is greater than 10% of the range.
[2] Need to use the REL function.

Frequency

Note
- AC + DC measurements do not allow frequency measurements.
- Input protection of 1000V peak on all ranges.

Measurement Range [1]	Accuracy (1 year 23˚C ±5˚C)
10Hz ~ 500Hz	0.01%+5
500Hz ~ 500kHz	0.01%+3
500kHz ~ 1MHz	0.01%+5

[1] For input minimum sensitivity, please refer to bellowing tables

Voltage Measurement Sensitivity Minimum Sensitivity (RMS sine wave)			
Range	10~100kHz	100k~500kHz	500k~1MHz
500mV	35mV	200mV	500mV
5V	0.25V	0.5V	1V
50V	2.5V	5V	5V
500V	25V	uncal	uncal
750V	50V	uncal	uncal

Current Measurement Sensitivity Minimum Sensitivity (RMS sine wave)	
Range	30~20kHz
500μA	35μA
5mA	0.25mA
50mA	2.5mA
500mA	25mA
5 A	0.25A(<2kHz)
10 A	2.5A(<2kHz)

Temperature

Note
- The temperature specifications do not include sensor error.
- This feature is not supported on the GDM-8341.

Sensor	Type	Measurement Range	Resolution	Accuracy (1 year 23˚C ±5˚C)
Thermocouple	J K T	-200 ~ +300°C	0.1°C	2 °C

Ordering information

GDM-8342 with GPIB	50000 counts Dual Measurement Multimeter with USB Storage/Device and opt. GPIB
GDM-8342	50000 counts Dual Measurement Multimeter with USB Storage/Device
GDM-8341	50000 counts Dual Measurement Multimeter with USB Device

Standard Accessories

Safety Instruction Sheet x 1

Power cord x 1

Test lead GTL-207 x 1

CD x 1 (including complete user manual, USB driver and PC software)

Optional

Opt.01 GPIB Interface

Note : Optional GPIB interface is only for GDM-8342 and it must be installed in factory.

Optional Accessories

GTL-205 Temperature probe adaptor with thermocouple (K-type), Approx. 1000mm

GTL-246 USB Cable, A-B type, Approx. 1200mm

GTL-248 GPIB Cable, Approx. 2m

GTL-251 GPIB-USB-HS (High Speed)

Replacement Information

New Model	Replacement
GDM-8342 with GPIB	GDM-8246 G+R
GDM-8342	GDM-8246
GDM-8341	GDM-8245

After GDM-834x series launched, the GDM-8245/8246 is going to be phase-out. The above table shows the replacement between models. For difference between this two series, please refer to the comparison below.

Brand	GW Instek	GW Instek	GW Instek	GW Instek
Model	GDM-8342	GDM-8246	GDM-8341	GDM-8245
Counts (full scale)	51,000	50,000	51,000	50,000
Display	Dual Display(VFD)	Dual Display(LED)	Dual Display(VFD)	Dual Display(LED)
	Dual Measurement	V/HZ,A/HZ,dBm	Dual Measurement	V/HZ,A/HZ,dBm
Sample Rate	5/s (slow) 10/s (med) 40/s (fast)	5/s (only)	5/s (slow) 10/s (med) 40/s (fast)	5/s (only)
DC Voltage				
Range(V)	500mV~1000V	500mV~1000V	500mV~1000V	500mV~1000V
Best Accuracy	0.02%+4	0.02%+4	0.02%+4	0.03%+4
Revolution(Min. Range)	10μV	10μV	10μV	10μV
AC Voltage True RMS				
Range	500mV~750V	500mV~1000V	500mV~750V	500mV~1000V
Best Accuracy	0.35%+15 (50Hz~10kHz)	0.3%+30 (50Hz~2kHz)	0.35%+15 (50Hz~10kHz)	0.5%+15 (50Hz~2kHz)
Resolution(Min. Range)	10μV	10μV	10μV	10μV
Bandwidth	100kHz	100kHz	100kHz	50kHz
AC+DC Voltage True RMS				
Range	500mV~750V	500mV~1000V	500mV~750V	500mV~1000V
Best Accuracy	0.35%+25 (50Hz~10kHz)	0.3%+30 (50Hz~2kHz)	0.35%+25 (50Hz~10kHz)	0.5%+15 (50Hz~2kHz)
Resolution(Min. Range)	10μV	10μV	10μV	10μV
Bandwidth	100kHz	100kHz	100kHz	50kHz
DC Current				
Range	500μA~12A	500μA~**20A** 20A for 15s max	500μA~12A	500μA~**20A** 20A for 15s max
Best Accuracy	0.05%+4	0.05%+3	0.05%+4	0.2%+2
Resolution(Min. Range)	10nA	10nA	10nA	10nA
AC Current True RMS				
Rang	500μA~12A	500μA~**20A** 20A for 15s max	500μA~12A	500μA~**20A** 20A for 15s max
Best Accuracy	0.5%+20 (50Hz~2kHz)	0.5%+15 (45Hz~2kHz)	0.5%+20 (50Hz~2kHz)	0.5%+15 (45Hz~2kHz)
Resolution(Min. Range)	10nA	10nA	10nA	10nA
Bandwidth	20kHz	20kHz	20kHz	20kHz
AC+DC Current True RMS				
Rang	500μA~12A	500μA~**20A** 20A for 15s max	500μA~12A	500μA~**20A** 20A for 15s max
Best Accuracy	0.5%+30 (50Hz~2kHz)	0.5%+15 (45Hz~2kHz)	0.5%+30 (50Hz~2kHz)	0.5%+15 (45Hz~2kHz)
Resolution(Min. Range)	10nA	10nA	10nA	10nA
Bandwidth	20kHz	20kHz	20kHz	20kHz
Resistance				
Range	50Ω~50MΩ	50Ω~20MΩ	50Ω~50MΩ	500Ω~20MΩ
Best Accuracy	0.1%+3	0.1%+2	0.1%+3	0.1%+2
Resolution(Min. Range)	10mΩ	10mΩ	10mΩ	10mΩ
Wire	2Wire	2Wire	2Wire	2Wire
Capacitance				
Range	5nF~50μF	5nF~50μF	5nF~50μF	5nF~50μF
Best Accuracy	2%+4	2%+4	2%+4	2%+4
Resolution(Min. Range)	0.001nF	0.001nF	0.001nF	0.001nF

(Continue)

Brand	GW Instek	GW Instek	GW Instek	GW Instek
Model	GDM-8342	GDM-8246	GDM-8341	GDM-8245
Frequency				
Range	10Hz ~ 1MHz	ACV: 10Hz ~ 200kHz ACA : 10Hz ~ 20kHz	10Hz ~ 1MHz	ACV: 10Hz ~ 200kHz ACA : 10Hz ~ 20kHz
Min. Input Level (depend on range)	35mV/35μA	ACV: ≧120mV ~ ≧12V ACA: ≧90μA ~ ≧9A	35mV/35μA	ACV: ≧120mV ~ ≧12V ACA: ≧90μA ~ ≧9A
Best Accuracy	0.01%+3	0.05%+1	0.01%+3	0.05%+1
Resolution	0.01Hz	X	0.01Hz	X
Period	2μs~100ms	N/A	2μs~100ms	N/A
Diode Test	YES	YES	YES	YES
Continuty Beeper	YES	YES	YES	YES
Temp.Measurement	Type K,J,T	N/A	N/A	N/A
Math	Rel, Max/Min, dBm, dB, Hold, MX+B, 1/X, Ref%, Compare	Rel, Max/Min, dBm, dB,Hold	Rel, Max/Min, dBm, dB, Hold, MX+B, 1/X, Ref%, Compare	Rel, Max/Min, dBm, dB,Hold
USB Storage	Standard	N/A	N/A	N/A
RS-232C	N/A	Standard	N/A	N/A
USB Device	Standard	N/A	Standard	N/A
GPIB	Factory Option	OPTION	N/A	N/A
Software	YES	YES	YES	N/A